

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

LEE, Young-Pil

The Cheonghwa Bldg. 1571-18 Seocho-dong, Seocho-gu,  
Seoul 137-874, Republic of Korea

# PCT

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 26 JULY 2004 (26.07.2004)

Applicant's or agent's file reference  
HC-21864-PCT

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/KR2004/000942**

International filing date (day/month/year)

**23 APRIL 2004 (23.04.2004)**

Priority date(day/month/year)

23 APRIL 2003 (23.04.2003)

International Patent Classification (IPC) or both national classification and IPC

**IPC7 F04B 27/08**

Applicant

**HALLA CLIMATE CONTROL CORPORATION et al**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.  
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM, Sung Nam

Telephone No. 82-42-481-5515



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/000942

**Box No. I Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/000942

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	1-8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

**2. Citations and explanations :**

Reference is made to the following documents:

D1: JP 2001-280253 A

D2: JP 2001-200785 A

**1. Novelty**

Claims 1-8 relate to a motor-driven swash plate compressor capable of preventing the decrease in the efficiency of a motor by maintaining the discharging pressure at a certain level, improving lubrication of a sliding portion of a swash plate chamber, and cooling the motor by introducing a coolant into a motor chamber.

D1 and D2 do not disclose a front housing, a previous intake chamber for sucking in a first compressed coolant, and a plurality of duplex pistons which perform reciprocating motion according to the inclination of a swash plate of a rear housing which has a following discharge chamber for discharging a second compressed coolant.

Therefore, claims 1-8 meet the criteria set forth in PCT Article 33(2) in respect of novelty.

**2. Inventive Step**

D1 discloses the technical features of a multistage compressor comprising a previous stage compressing element (30), a following stage compressing element (40), a motor (20), and a following stage connecting pipe (16).

D2 discloses the technical features of an electrically driven swash plate compressor comprising a motor chamber (15), an electric motor (12), a swash plate (22), connecting passages (39; 42), and an intake chamber (31).

(Continued on Supplemental Sheet.)

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/000942

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of :

Box V.

Claim 1 of the present application includes the technical features of front and rear housings and a plurality of duplex pistons, which are not disclosed in D1 and D2. Accordingly, claim 1 is different from said documents in the shape and the structure of a compressor, and in the effect resulting from said difference as well.

Therefore, claim 1 meets the criteria set forth in PCT Article 33(3) in respect of inventive step, and claims 2-8 dependent on claim 2 also meet the criteria set forth in PCT Article 33(3).

**3. Industrial Applicability**

Claims 1-8 which relate to a motor-driven swash plate compressor meet the criteria set forth in PCT Article 33(4).